

What is claimed is:

1. A computer system comprising:

at least two processing units having different energy  
efficiencies and adapted to at least execute tasks based

5 upon processing requirements of the tasks and a  
corresponding processing capability; and

a scheduler adapted to schedule a given task for  
execution by one of said at least two processing units so as  
to consume a least amount of energy, and to reschedule the  
10 given task for execution by an other of said at least two  
processing units when a determination indicates that said  
one of said at least two processing units is unable to  
accommodate execution of the given task based upon the  
processing requirements of the given task and the  
15 corresponding processing capability.

2. The computer system according to claim 1, wherein  
the processing requirements comprise an end time at which  
the given task is to be completed.

3. The computer system according to claim 1, wherein  
20 said scheduler is a function embodied within a hardware  
component other than said at least two processing units.

4. The computer system according to claim 1, wherein one of said at least two processing units comprise said scheduler.

5 5. The computer system according to claim 1, wherein said scheduler is further adapted to intercept interrupts from said at least two processing units and peripheral devices.

6. The computer system according to claim 1, wherein said at least two processing units share memory space.

10 7. The computer system according to claim 1, wherein said at least two processing units share input/output space.

8. The computer system according to claim 1, wherein said at least two processing units share input/output space, and said scheduler and said at least two processing units  
15 share memory space.

9. The computer system according to claim 1, further comprising a task attribute store adapted to store at least some of the processing requirements of at least some of the scheduled tasks.

10. The computer system according to claim 1, wherein the determination is made by said scheduler.

11. The computer system according to claim 1, wherein the determination is made by said one of said at least  
5 processing units.

12. The computer system according to claim 1, wherein said at least two processing units are further adapted to one of accept and reject the tasks for execution.

13. The computer system according to claim 1, wherein  
10 the processing requirements comprise a processing capacity required to execute the given task.

14. A computer system comprising:

a plurality of processing units, each of the plurality of processing units adapted to execute tasks thereon, and at  
15 least two of the plurality of processing units having different energy efficiencies; and

a scheduler adapted to schedule a given task for execution by one of said plurality of processing units by querying said plurality of processing units in a partial  
20 order of descending energy efficiency to one of accept and reject the execution of the given task until one of the

given task is one of accepted and executed by said one of said plurality of processing units and the given task is rejected by all of said plurality of processing units.

5 15. The computer system according to claim 14, wherein said scheduler is a function embodied within one of said plurality of processing units.

10 16. The computer system according to claim 14, wherein said scheduler is a function embodied within a hardware component other than one of said plurality of processing units.

17. The computer system according to claim 14, wherein said scheduler intercepts interrupts from each of said plurality of processing units and peripheral devices.

15 18. The computer system according to claim 14, wherein said plurality of processing units share memory space.

19. The computer system according to claim 14, wherein said plurality of processing units share input/output space.

20. The computer system according to claim 14, wherein said plurality of processing units share input/output space,

and said scheduler and said plurality of processing units share memory space.

21. The computer system according to claim 14, further comprising a task attribute store adapted to store at least some of the processing requirements of at least some of the tasks.

22. The computer system according to claim 14, wherein said scheduler is further adapted to exclude any of said plurality of processing units from the partial order based upon at least one predefined condition.

23. The computer system according to claim 14, wherein the processing requirements comprise a processing capacity required to execute the given task.

24. A computer system comprising:  
at least two processing units having different energy efficiencies and adapted to one of accept and reject scheduled tasks based upon processing requirements of the scheduled tasks and a corresponding processing capability,

and to at least execute the scheduled tasks that are  
accepted; and

a scheduler adapted to schedule a given task for  
execution by one of said at least two processing units so as  
5 to consume a least amount of energy, and to rescheduled the  
given task for execution by an other of said at least two  
processing units when said one of said at least two  
processing units rejects the execution of the given task.

25. The computer system according to claim 24, wherein  
10 said scheduler is a function embodied within a hardware  
component other than said at least two processing units.

26. The computer system according to claim 24, wherein  
one of said at least two processing units comprise said  
scheduler.

15 27. The computer system according to claim 24, wherein  
said scheduler is further adapted to intercept interrupts  
from said at least two processing units and peripheral  
devices.

28. The computer system according to claim 24, wherein  
20 said at least two processing units share memory space.

29. The computer system according to claim 24, wherein said at least two processing units share input/output space.

30. The computer system according to claim 24, wherein said at least two processing units share input/output space,  
5 and said scheduler and said at least two processing units share memory space.

31. A computer system comprising:

a plurality of processing units, each of the plurality of processing units adapted to execute tasks thereon, and at  
10 least two of the plurality of processing units having different energy efficiencies;

a processor attribute table adapted to store processing capability information for at least some of said plurality of processors and to update the processing capability  
15 information dynamically when the processing capability information changes; and

a scheduler adapted, for a given task, to retrieve at least some of the processing capability information from said processor attribute table in one of a partial order and  
20 a strict order of descending energy efficiency until one of the plurality of processors is found to possess adequate processing capability with respect to task processing requirements for the given task, and to schedule the given

task for execution by said one of the plurality of  
processors.

32. The computer system according to claim 31, wherein  
said computer system further comprises at least one  
5 functional block adapted to perform at least one function  
associated with an interrupt.

33. The computer system according to claim 31, wherein  
said computer system further comprises at least one  
functional block adapted to perform at least one function  
10 utilized by a task.